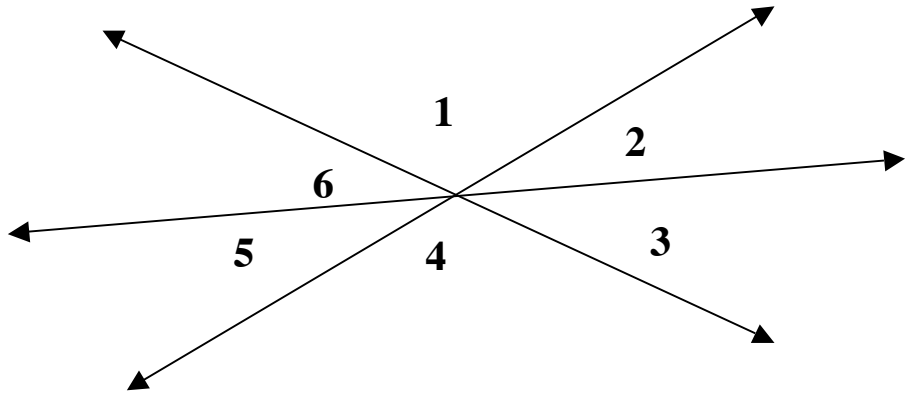
**Name** _____ **Date** _____

**Problem 1**

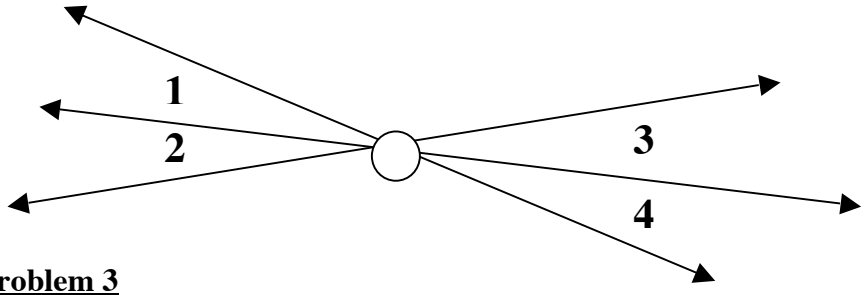
Using the diagram below, answer the following problems.




□ 1 □□ __
□ 6 □□ __
□ 2 □□ __
□ 1 + □ 6 = □ __ + □ __

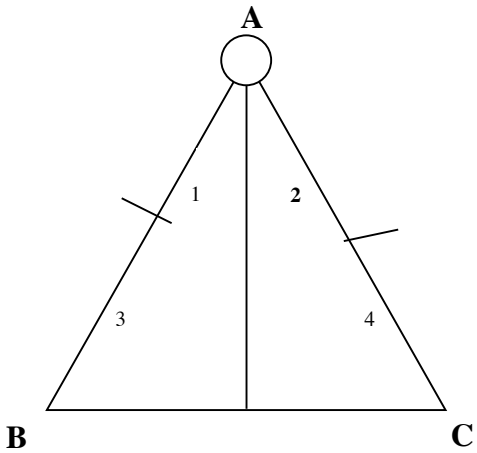
**Problem 2**

Next, picture the Sun in the Center of the angles below. List the congruent angles.



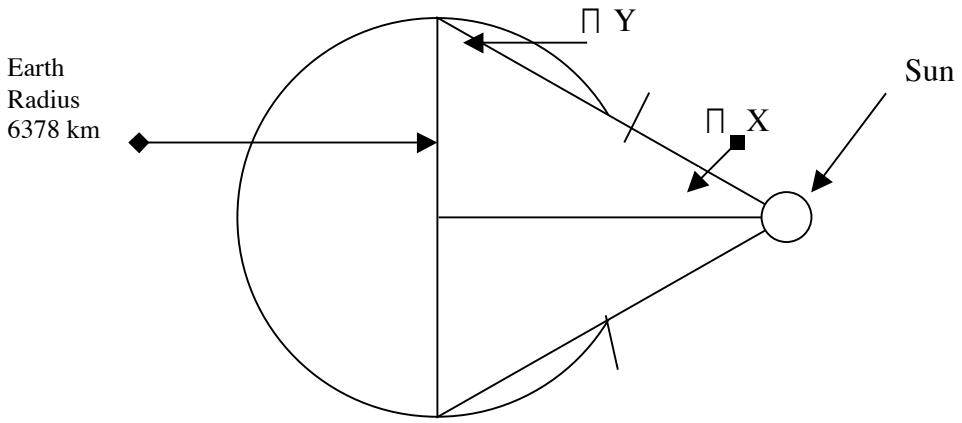

**Problem 3**

Now, suppose that □ 1 and □ 2 connect to form an isosceles triangle and the Sun is at the top vertex. List all congruent angles and congruent sides.



**Problem 4**

Suppose that the isosceles triangle was rotated 90 degrees clockwise.Picture the base of the triangle intersecting the earth. (Note : not to scale)

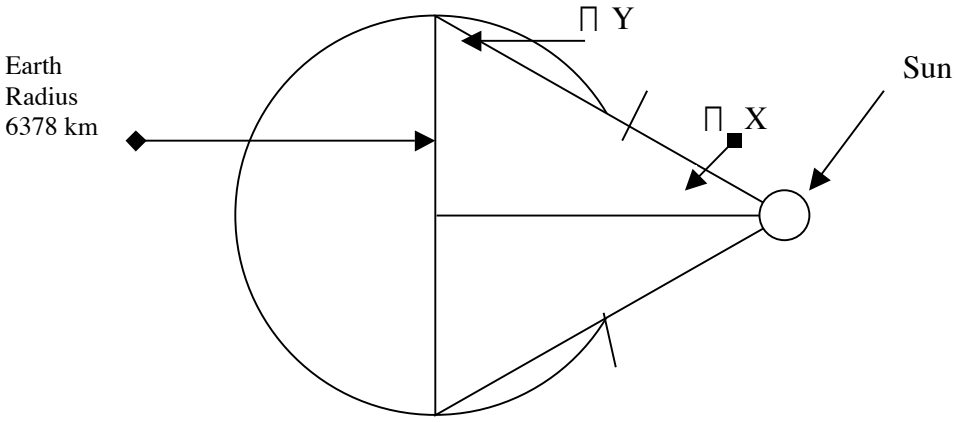



What is the Earth's diameter?

If the distance from the Earth to the Sun is 150, 000,000 kilometers, what is the measure of ∠ X ?

**Problem 5**

Can the measure of ∠ Y be determined? Explain your reasoning.




The Earth's radius is 6378 km and ∠ X is 0.00244 degrees, is it possible to determine the distance to the Sun?